



Hardy Fern Foundation Quarterly



Summer 2011

THE HARDY FERN FOUNDATION

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Web site: www.hardyfernfoundation.org

The Hardy Fern Foundation was founded in 1989 to establish a comprehensive collection of the world's hardy ferns for display, testing, evaluation, public education and introduction to the gardening and horticultural community. Many rare and unusual species, hybrids and varieties are being propagated from spores and tested in selected environments for their different degrees of hardiness and ornamental garden value.

The primary fern display and test garden is located at, and in conjunction with, The Rhododendron Species Botanical Garden at the Weyerhaeuser Corporate Headquarters, in Federal Way, Washington.

Satellite fern gardens are at the Birmingham Botanical Gardens, Birmingham, Alabama, California State University at Sacramento, California, Coastal Maine Botanical Garden, Boothbay, Maine. Dallas Arboretum, Dallas, Texas, Denver Botanic Gardens, Denver, Colorado, Georgeson Botanical Garden, University of Alaska, Fairbanks, Alaska, Harry P. Leu Garden, Orlando, Florida, Inniswood Metro Gardens, Columbus, Ohio, New York Botanical Garden, Bronx, New York, and Strybing Arboretum, San Francisco, California.

The fern display gardens are at Bainbridge Island Library. Bainbridge Island, WA, Bellevue Botanical Garden, Bellevue, WA, Lakewold, Tacoma, Washington, Lotusland, Santa Barbara, California, Les Jardins de Metis, Quebec, Canada, Rotary Gardens, Janesville, WI, and Whitehall Historic Home and Garden, Louisville, KY.

Hardy Fern Foundation members participate in a spore exchange, receive a quarterly newsletter and have first access to ferns as they are ready for distribution.

Cover design by Willanna Bradner

HARDY FERN FOUNDATION QUARTERLY

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President's Message

July 2011

Greetings to all members near and far.

The Hardy Fern Foundation Fern Festival was held June 3-4, 2011 at The Center For Urban Horticulture Seattle, Washington. Even though we suffered damage to some of our fern stock from exceptionally deep freezes in fall 2010 and late winter 2011 weather, our sale proved to be one of the best.

Our featured speaker, Marietta O'Byrne, noted shade gardening and hellebore expert, wowed the audience with stunning images of her garden and a colorful narrative.

We proudly welcomed new vendors; The Growing Girls with Beth Burman, who grows her plants primarily outdoors insuring their hardiness. Also joining us this year were Jerry and Carolyn Doherty, long time members and volunteers, displaying a nice selection of home propagated ferns. Customers took quick advantage of the opportunity. We also thank the many vendors from past years, namely: Sylvia Duryee, Foliage Gardens, Keeping It Green Nursery, Robin's Nest Nursery, Sundquist Nursery and of course, Hardy Fern Foundation collections.

We held our annual meeting prior to the lecture and welcomed Nancy Strahle and Jane Whitely as new Board Members. Sue Olsen was honored as an Honorary Board Member.

Many thanks to Michelle Bundy and her friend and neighbor, April James, for a lovely catered meal served in the atrium at the Center For Urban Horticulture prior to the evening's activities. A marvelous treat indeed, we hope to make this a part of our annual routine.

Friday, June 17, 2011, Children's Hospital Clinic in Bellevue, Washington, welcomed relatives and local friends to a ceremony dedicating a new Fern Garden honoring the late Jack Docter, MD, former Chief of Staff and Medical Director of the hospital from 1959 to 1981. Jack was a former Hardy Fern Foundation Board Member and treasurer who for many years, kept our financial records in order. Also an avid fern fancier, he had an extensive collection of ferns in his private garden. Some 75-80 species were transplanted to this garden. This is a nicely designed garden of 3,000 to 4,000 square feet with picturesque circular pathways, to lead visitors on a magic journey through trees and ferns. Please see accompanying article and photos in this issue of the Quarterly.

The Southeast US Fern Foray which was held June 14 to 27, 2011, exploring public and private gardens was a great success enjoyed by all. This tour organized by Naud Burnett and Kent Kratz included visits to two of our Affiliate Gardens, Whitehall Historic Home and Garden and Birmingham Botanical Gardens. During the visit Whitehall arranged for a special and entertaining luncheon lecture by Dr. Dick Lighty, noted plant authority and past Director of the Mt. Cuba Center in Delaware, who shared a photographic history

of the evolution of his Fern Fetish. Please look for more reports in future issues of the Quarterly.

Now that summer is here finally, let's go for the Fern Burn!

Thank you, best regards,

Pat Kennar

Welcome New Members!

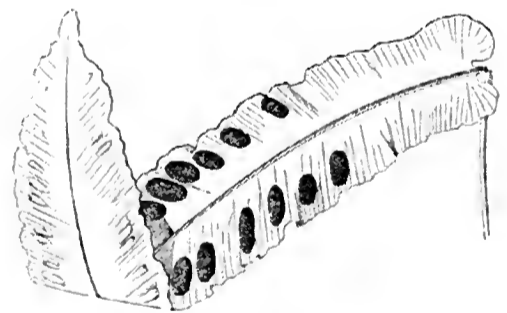
**Anne Albright
Bud Bowen
Dianne Carreri
Mark Choi
Debra Dickinson
Jan Eastburn
Susan Eggers
Vera Fair
Jeannene Fizer
Darla Harris**

**Mike Hicks
Debra Lehrberger
Rebecca Norton & Craig Miller
Kathryn Pasquenza
Linda & Bob Pyles
Catherine C Selin
Gary Seybold
David St John
Virginia Tripp
Patricia Van Cleave**

Spore Exchange Update

Carolyn Doherty

To make it easier in the future to order spores and process orders, please note the following:



Spore varieties will continue to cost 50 cents each.

Orders may continue to include a mailer with postage —or— the new option is that orders may instead include \$1.25 for a padded mailer and/or \$1.50 for postage inside the U.S. or \$2.50 for international postage.

Please make checks payable to Carolyn Doherty/ HFF Spore Exchange Director.

We will no longer request or accept international postage coupons.

Please include your email address so we can communicate at ferns pores@hotmail.com

Also, please consider contributing spores to our exchange if you have the opportunity to collect spore that others might enjoy growing.

Dedication of the Fern Garden at Children's Hospital Clinic, Bellevue, Washington

June 17, 2011

Friday, June 17, 2011 friends and colleagues gathered at the newly opened Children's Hospital Clinic in Bellevue, Washington to dedicate their new Fern Garden. Jeff Hughes, landscape and garden director for The Children's Hospital in Seattle, Washington designed this special garden to honor its former Director and Chief of Staff, Jack M. Docter, MD.

It was a clear and sunny day for the 45-50 guests assembled in front of this uniquely designed area, dissected by circular paths winding in between rich plantings of ferns and other companion plants. These series of beds were punctuated by many trees, deciduous and evergreen, planted to soon grow a canopy of filtered shade necessary to keep the plants content.

The ceremony was honored by the presence of Jack's widow, Diggs Docter, and two of their children and families. *(See photo page 59)* Three of Jack's former colleagues gave eulogies remembering the good times during his tenure at Children's Hospital and how much they all admired his leadership and friendship.

Jack Docter was a former Board Member and treasurer of The Hardy Fern Foundation. For many years he managed our financial records and supervised our endowment.

He was also an avid fern fancier and bragged about his collection of ferns. 75-80 species of his ferns were transplanted into this garden by members of the Children's Hospital gardening staff, creating a wonderful display.

This garden of about 3,000 to 4,000 square feet contains many other companion plants with added hardscape items such as rocks, logs and two well situated benches. One definitely has the feeling of relaxed solitude when visiting or strolling through it.

Even though the area is somewhat moist under foot, landscape irrigation is present.

I wait with great anticipation, the full maturity of the trees, ferns and other plants in this beautiful garden.

I hope many of our members will be able to see and experience this great garden for years to come.

Respectfully,

Pat Kennar



An anecdote about Harry Roskam:

Ben van Wierst, Lelystad, The Netherlands



For years he traveled in the Northeastern Pyrenean mountains and brought some *Gymnocarpium* from there home. He was not so experienced with ferns in those days and it took some time for him to find out that there was not only *Gymnocarpium* but also another, unidentified fern in the clump. In the following years many a specialist looked at the plant but it took till recent times before it was officially named after Harry by Christopher Roy Fraser-Jenkins. He thinks the plant is a cross between *Gymnocarpium robertianum* and *Cystopteris dickeana*. Only it is a pity that Harry's name was misspelled: x *Cystocarpium roskumianum*. This find is a reason to investigate the relationship between *Cystopteris* and *Gymnocarpium* which is being done right now by Carl Rothfels at Duke University, Durham NC. USA. He is thinking also about the possibility of renaming the fern in the right way. (See photo page 58.) Harry Roskam photo above courtesy of Ben van Wierst.

Jack M. Docter, MD

1915 ~ 2008

Chief of Staff and Medical Director

Children's Orthopedic Hospital and Clinic

(1959-1981)

A dedicated clinician,

adored by his patients' families, respected by his colleagues.

Shepherded the transformation of COH

from a community hospital to an academic medical center.

Temperate, values-driven

respectful of others, genuinely kind, a natural listener.

For him, it was always about the children ~~ never about him.

He loved the Northwest outdoors and his hardy fern garden.

Athyrium otophorum

Eared lady fern, Auriculate lady fern

James R. Horrocks
Salt Lake City, UT

The genus *Athyrium* comprises some 200 species worldwide and are almost all deciduous. They are also terrestrial in habit with no epiphytic species. There has been some uncertainty as to the derivation of the name “*Athyrium*”. It has been suggested that it is in reference to the delayed opening of the indusia, but a more apt description would be Sue Olsen’s favorite from the Greek “*athoros*” meaning “good at breeding”. Lady ferns are well known for springing up just about anywhere that there is dampness. They can certainly appear as unwanted guests in spore cultures. The species name “*otophorum*” means “ear-bearing” in reference to the basal pinnule being auriculate on the anterior side.

Athyrium otophorum is native to the wooded areas of China, Korea, and Japan and is also described by Fraser-Jenkins as being found in the Western Himalaya. This species has hybridized with several other Japanese species. One variety “*okanum*” or “*okonum*” is known with pinnules being distinctive mid-green with a slight purplish cast which is striking in contrast to the darker wine-red costa. It is often more available than the type.

Description: The rhizome has been described as short and erect to sub erect and ascending. It is covered with the basal stubs of old fronds and is densely scaly with black or dark brown scales. The stipes are grooved and purplish to pale brown and very scaly at the base, the scales being broadly linear. The stipes are about one-third the length of the frond and are smooth. The rachis is smooth except for short glandular hairs on the upper side. The rachis and costa are burgundy and glossy, giving the firmly herbaceous fronds a most attractive appearance. The 18 to 24 inch fronds are slightly leathery and have been described as somewhat evergreen since they do not wither with the frost but are maintained into the winter if not too harsh. In colder climes they are, for the most part, deciduous. The fronds are broadly ovate to oblong-ovate, even perhaps broadly triangular in outline and are bipinnate-pinnatifid. The pinnae are narrowly triangular with the basal pinnule sporting an auricle on the upper side. There are usually 8 to 10 pair of pinnae which are sessile, that is, not stalked, which is interesting and significant. Strangely, the variety “*okanum*” does have stalked pinnae. The sori are parallel, arranged in a herring-bone pattern as in *Asplenium*. The indusia are brownish-gray and straight to slightly curved.

Culture: This lovely medium sized fern was first introduced to cultivation in the U. S. by Judith Jones (Fancy Fronds Nursery). It is often confused as a type of Japanese painted fern and has even been labeled at times, incorrectly, as English painted fern, a gross misnomer. This species is at its best in humid climes, not doing well in semi-arid locales (such as the author’s). It should be protected from direct sunlight, growing best in open shade in moist humusy soil. Considered hardy in Zone 6 and above, it is a beautiful plant with its lime-green pinnules contrasting with the wine-red costa and rachis. As the

fronds mature, they become a more subdued grayish-green. “Refreshing” is probably a good way to describe it. (*See photo page 59*)

References:

Flora of Japan (1965) Jisaburo Ohwi, Smithsonian Institution, Washington D.C.

Encyclopedia of Garden Ferns (2007) Sue Olsen, Timber Press, Portland

Fern Growers Manual (Revised 2001) Barbara Joe Hoshizaki and Robbin C. Moran, Timber Press, Portland

Ferns For American Gardens (1994) John T. Mickel, Macmillan Publishing Co. New York

An Illustrated Fern Flora of The West Himalaya Vol. II (2000) S. P. Khullar, International Book Distributors, Dehra Dun (India)

A Guide To Hardy Ferns (1984) Richard Rush, The British Pteridological Society, London

De Nederlandse Varenvereniging ***The Dutch Fern Society***

Harry Roskam, President
The Netherlands

We are honoured with Sue Olsen’s invitation to write an article in the bulletin of the Hardy Fern Foundation about the Dutch Fern Society. We hope that this will increase the connection between our Societies.

The Dutch Fern Society was officially founded in 1989, but had its origin in 1987. Then one of the founding fathers, a retired man, by name of Joop Comijs placed an advertisement in the famous Dutch garden magazine, “Groei en bloei/*Growing and blooming*”. He got reactions from 7 people and soon after that he organized a first meeting. At this meeting a first committee was formed, with Joop Comijs as secretary and treasurer, Luuk Jaarsma, special tasks and Harry Roskam as chairman .

This first committee gave itself the task to form a real Society and made a statute.

The first bulletin from our group was written by Joop and he gave it the name “Varen-Varia”, which is still the name of our magazine. This first number came out in May 1988 and was made on Joop’s old type writing machine and copied.

The first members’ meeting was in November 1988 and there were 10 of the 21 members at that moment. The members present there chose the earlier named men as the official first committee with the task to prepare the Society. In the third members’ meeting in May 1989 the concept statute was presented and discussed. An official 6-man committee was chosen. To the first committee were added, Gerard Proper as treasurer, Prof. Bert Hennipman as a common member and Cor van Moesdijk, also as a common member. In the summer of 1989 “De Nederlandse Varenvereniging”/*the Dutch Fern Society* was

registered officially. The number of members grew steadily and was at that moment about 50.

Our bulletin “Varen-Varia”, – still written by Joop Comijs on his type writing machine – has reached number 12 and has increased to 10 pages. The content is a mix of reports of meetings and excursions, reports of discoveries of ferns in the Netherlands and also knowledge about ferns.

The Society has a tradition of 2 official meetings and a number of excursions a year. The excursions go to professional fern growers, nature areas with interesting ferns and to gardens of our members or to botanical gardens.

At the meetings, beside the official part, there is always a lecture and a fern exchange. We also have built up a tradition to determine ferns and discuss together about plants from our members at our autumn meeting.

The exchange market is our pride, because here, members, bring fern species they have grown the last year and give them away to other members. So “Exchange market” is not a good name for it and a proper name would be: “Give away market”. It is the place to get your particular species. Special for new and beginning growers, this is the opportunity to build up their collections. If, after some time, they have their own collection, then they do the same, for new members at that moment. We think that a market in this form is an investment in the future of the Society. Now in 2011 600 species and varieties circulate in the Society. Most of them are hardy ferns. There are very few members who grow tropical ferns.

The first printed “Varen-Varia” came out in 1991 in black and white, because of the great cost. In 2009 we had 120 members and therefore enough cash to print “Varen-Varia” partly in full-colour. We were very proud of it. It gives us a great opportunity to promote our Society.

At the end of the nineties we got our first website made by the chairman of that moment. It was a great success and gave us more notoriety and with that more members. In 2010 the website <http://www.nederlandse-varenvereniging.nl/>, was modernistic and looking marvelous. We have great intentions to develop the site to a yet higher level.

These last years a spore exchange point is managed by Rens Huibers, a great expert and enthusiastic fern lover who was for many years secretary of the society. He has made the spore exchange an important service for members and many others outside the Society and therefore also a good instrument for publicity.

The result of all of this is that we now number 140 members. The border of 150 is nearby. Most members are Dutch, but we have also many Belgian members (17) mostly from Flanders, the Dutch speaking part of that country. But there are also members from Germany (3), Italy (1), France (1) and Portugal (1). We are in the lucky circumstance that a relatively great number of our members are active within the society to help with the organization of all these activities.

During the last years we have built contacts with Fern Societies in Britain, the United States and Germany. With the German fern friends the contact is so good that in the last years, Dutch members visited the German meetings. In 2011 the German fern friends have their meeting in Holland and our Society is the host. One of the places we will visit, the Hortus Botanicus Leiden is the home place of our society because of its collection, in particular the hardy collection, and because we have here a free place for our meetings.

The hardy collection has been built up since the early nineties by the writer of this article and has now reached the number of four hundred mostly hardy species and some varieties – mostly species, because the Hortus is a scientific botanical garden. This garden was founded in 1596 by Carolus Clusius and is one of the oldest in the world.

A new development is that a group of Dutch plant men and women are united together in the “Werkgroep Nederlandse varens/*Working-group Dutch Ferns*” connected to the Society. The members of this working group seek in nature and in towns for ferns. The Netherlands are a very flat country with not a great exciting fern flora, but there are exceptions. In the newest polders – there are some young forests with – to our surprise – a lot of, for the Netherlands, rare ferns. So there are *Polystichum aculeatum*, *Polystichum setiferum*, *Polystichum lonchitis* and even *Polystichum x bicknellii*, the cross between *P. setiferum* and *P. aculeatum*. But also *Gymnocarpium dryopteris*, *Gymnocarpium robertianum*, *Cystopteris fragilis* and a lot more.

In the urban environment grow, in this time of global warming, a lot of strange ferns, on houses, bridges and in gullies, such as species from *Cyrtomium*, *Adiantum*, and European *Polystichum* species, but for instance also an Asiatic *Polystichum tsus-simense*. These discoveries will also be reported in “Varen-Varia” and with that “Varen-Varia” will be a more scientific magazine.

In 2014 the Society will be 25 years old and we shall celebrate it with a great fern exposition and symposium in the Hortus Botanicus at Leiden. (*See photo pg. 59*) The preparations are started.

We, the present board of the Society, are very proud of the results we have reached in the past years and look for a yet greater future....a future with more international contacts and so also with the Hardy Fern Foundation.





Dipteris chinensis

Photo left courtesy of Roger Golding

Neocheiropteris palmatopedata

Photo below courtesy of Pat Acock



Below left *Cystopteris dickeana*, on the right *Gymnocarpium robertianum* and in the middle the cross x *Cystocarpium roskumianum* Photo courtesy of Ben van Wierst



**Martin Rickard
and Sani Guide in
limestone area.**

Photo courtesy of Pat Acock



Helleborus x hybridus

Winter JewelsR Cherry Blossom

Photo courtesy of Marietta O'Byrne



Diggs Docter and Family

Photo courtesy of Pat Kennar



Carpet of Hellebores

Photo courtesy of
Marietta O'Byrne

Lindsaea javanensis

Photo below courtesy of
Roger Golding



Athyrium otophorum

Photo courtesy of
Sue Olsen



Fern Garden at Leiden

The Netherlands

Photo courtesy of
Ben van Wierst

HARDY FERN FOUNDATION GOES TO HELL—ebores, that is!

Jo Laskowski
Federal Way, WA

Imagine a large room jammed with hundreds of ferns and companionable perennials—provided by the Hardy Fern Foundation with an assortment of local growers. Rather enticing, no? This is HFF's annual Fern Festival, held the first weekend of every June. On Friday evening, after the first day of the two-day sale, HFF also hosts a lecture. Typically presenting a speaker who is intimately associated with all things “fern” on some level, this year Marietta O'Byrne and her husband Ernie, two well-known hellebore hybridizers and perennial growers from Oregon, were invited to tantalize us with their work.

While hellebores are not native to North America, they've certainly become a staple in many NW landscapes. They've been considered a companion plant to ferns because they've both been grown in comparably shady, moist locations. As gardeners, our evolving awareness about environments appropriate for both plants has led to some surprising reappraisals. Now we more generally know that there are ferns that can be grown in environments ranging from high sun (**always** with appropriate moisture) to deep shade, a much wider range than common assumption ever allowed them. As we understand that there's a continuum to darkness—from dappled and quite light to inky black—that, too, expands the number of places we can site them. And in the same vein, some hellebores can be grown in full sun, contrary to conventional wisdom.

There are two ways that hellebores grow. One way is “stemmed,” or “caulescent.” The plant produces stems that emerge directly from the ground; they carry evergreen leaves, and the terminal of each stem carries the flowering racemes in early to mid-winter. New stems usually start to appear at flowering, too. Left on their own, the weight of these stems can lay them on the ground, where they push their terminals along—perhaps adding the term “*prostratus*” to their name? The spent stems bloom no more, and can be removed at ground level in May, to save energy otherwise put into seed production. Best known species of the genus are *Helleborus foetidus* and *H. argutifolius*.

The leaves of “stemless,” or “acaulescent” hellebores emerge directly from the soil. Flowers are carried on their own dedicated stems. In order to see and fully appreciate the flowers that appear in winter, it's best to remove the leaves in December. Species with this manner of growing include *H. niger* and *H. orientalis*.

The hybridizing performed by Marietta and Ernie at the Northwest Garden Nursery in Eugene, OR, has introduced some remarkable hellebores to the trade. They've created several double flowers, and developed new color strains. For an amazing portfolio of their work, check their website: www.northwestgardennursery.com.

As part of her presentation, Marietta showed us slides of their nursery and various garden rooms, letting us know that they're equally strong in their work with choice perennials.

Their website also features good images of their perennials, including these that we were shown:

<p>Galanthus spp; snowdrop Eranthis spp; aconite Cyclamen spp. Podophyllum spp. Omphalodes spp. Anemone spp. Erythronium spp. Lysichiton spp; skunk cabbage Arisaema spp. Dicentra spp; bleeding heart Trillium spp. Tiarella spp; foamflower</p>	<p>Jeffersonia dubia Anemonella thalictroides Dactylorhiza spp. Asarum spp; wild ginger Epimedium spp. Primula spp. Corydalis spp. Smilacina spp. Astilboides tabularis Rodgersia spp. Cardiocrinum spp. Trollius spp; globeflower</p>
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Beautiful day, great sale, good lecture—altogether another fine year for HFF’s Fern Festival!

From Ernie O’Byrne owner of Northwest Garden Nursery in Eugene, OR

“The Cherry Blossom strain is one of our favorites. The full, correct name is, Helleborus X hybridus Winter JewelsR Cherry Blossom (no quotes because it is a strain not a vegetatively produced plant). Also, the reason that there is a double in the center of the group shot is that it is impossible to breed a semi-double that breeds 100% true semi-double. There will always be the possibility of some singles and some doubles, but, since we use a double for pollinating, the chances lean toward double if it is not semi-double.” (See photo pg. 58.)

Saturday, September 24th

at the Rhododendron Species Botanical Garden

GROW YOUR OWN FERNS

Take the mystery out of growing and propagating your own ferns at home. Guided fern tour and propagation class – take home your own fern growing kit.

Class Fee: members \$15 & non-members \$25
Call Cathi at the gift shop to register: 253-661-9377

BPS CHINA 2010

OLD WORLD – NEW WORLDS!

Paul Ripley
Kent, England

I guess most of you, like our small party of 11 BPS (British Pteridological Society) members, have never been to China before. What is your perception? Mine was of Forbidden Cities, military dictatorship, and chickens, ducks, pigs and people crowded together in a countryside of paddy fields. The reality was of course different. A somewhat serendipitous contact by Yvonne Golding with Professor Cheng of the Botanical Institute, Kunming, led to her suggesting a trip. We jumped at the idea!

Kunming 11-12/9

China is of course a huge and populous country. It is made up of very large provinces, of which Yunnan is the most south-westerly. It borders Vietnam in the south-west and Tibet in the north-west. This gives some idea of its size and variety of geography, climate and vegetation.

We were met at Kunming airport by our hosts: the urbane and charming Professor Cheng, his assistant who had spent a year at Liverpool, but who was very shy and reluctant to use his English [understandable – the Liverpool dialect (scouse) is unintelligible even to the English], and our driver, OddJob. Brits know OddJob as the 25 stone, (steel-rimmed) bowler-hatted oriental hulk who acted as James Bond's personal trainer, and who was constantly ambushing our hero, narrowly avoiding killing him each time. He was in fact an extremely skillful and professional driver. Assiduously avoiding alcohol while on duty (only), he had a (illegal) radar speed detector hidden under a hat on the dashboard.

Hong Kong, and even Kunming airport (it's a 3-hour flight from Hong Kong) did not prepare us for reality in China. Greater Kunming has 5 million inhabitants, most of whom are on the road. More serious congestion is avoided by what in the US I think you call multiple occupancy – in this case of bicycles. Bicycles carrying deer carcasses also take up less space than a refrigerated lorry. Not that there weren't plenty of other vehicles – in considerable variety. A noisy and boisterous wedding party in our hotel, an amazing meal, and an open-air aerobics session with portable amplifiers that we passed on our evening walk, completed our initial experiences.

Hekou 13-15/9

This was a long drive on roads which became progressively quieter. Our drive was enlivened by a lunch stop where of course a wedding ceremony was in full swing. Traditional Chinese theatre was part of the entertainment. Chinese female singers have very high voices which are an acquired taste.

Hekou lies on the border with Vietnam. It was hot and humid here, with a monsoon climate and hilly terrain. Noticeably poorer, with fewer posh vehicles, lots of mopeds

(carrying the entire family and its possessions), bicycles of course, the curious and ubiquitous mini-tractors with the single front wheel connected to the handle-bar, and noisy smoky lorries with the “engine” unenclosed.

A brief exploration on arrival, where 6 species were growing on a single roadside palm, set the scene for the visit. Some of the ferns here, such as *Pseudodrynaria coronans*, were not seen elsewhere on our trip.

The countryside around Hekou is deeply folded. Our first full day in the south saw us exploring a delightful watery, if secondary, forest. A stream we stepped over on the way out had to be negotiated with bare feet after a shower of rain had caused it to swell remarkably quickly. A huge variety of ferns, nearly all completely new to us, assailed us. *Angiopteris hokouensis*, *Gymnosphaera gigantea*, and *Archangiopteris hokouensis* starred, but the huge variety of ferns included *Tectaria (decurrens)*, *Cibotium barometz*, *Diplazium donianum*, thelypterids (*Pronephrium gymnopteridifrons*, and *Cyclosorus papilio* – the lower, abruptly-reduced pinnae looking like little butterflies), aspleniums (*nidus*, *excisum* and *obscurum*). *Pteris (semipinnata* and *ensiformis*), *Blechnum (orientale)*, polypods such as *Colysis elliptica* and *Microsorium punctatum*, ctenitopsis, lygodium and *Antrophyum (annamense)* were all represented.

One of the difficulties of fern identification on this trip was the renaming and reclassification of many genera in the light of recent advances in molecular biology and taxonomy.

On the next day, prevented from reaching our original destination, a (rare) preserved forest reserve, by a road accident (why were we not surprised?), we visited an area extensively exploited by banana and rubber plantations, and pineapple groves. Fascinating to see the rubber trees, tapped daily for their harvest of latex. Perhaps this explains the success of China’s birth control. All these plants were on steep terraced slopes, and must have been worked entirely by hand. No labour shortage in China! Nevertheless there was a huge variety of ferns. We saw *Phymatodes longissima*, growing by an attractive waterfall, *Ctenitopsis sagenioides*, *Lygodium flexuosum*, *Ampelopteris prolifera* (buds grow directly from the frond), *Angiopteris wangii*, *Pleocnemia submembranacea*, and *Adiantum flabellulatum*. Highlights for me were the lindsaeas – *ensifolia*, *javanensis* and *heterophylla*, and *Sphenomeris chinensis*. Our friend *Dicranopteris linearis* grew alongside the road of course.

We tried to get stamps in the evening, but tourism is not known in Hekou. Eventually we managed to get RMB 1.20 stamps, 4 of which per card sufficed for Europe. But it saved having to write anything too creative on the postcards. Not that we found any postcards.

Pingbian 16th- 18th

We had our 7th and 8th passport checks but managed to escape for the journey north, climbing to 1600m through pineapple, rubber and banana palms, planted on the steep slopes. Reaching the top, the climate and geography became suddenly sunnier and drier.

We stopped for lunch to see the tree fern *Gymnosphaera austroyunnanensis*, one of only 30 in the province. Packed lunches (when we did not dine out) consisted of bananas, dry biscuits, buns, Coca-Cola and water. The buns' plastic bags swelled in the high altitude and made a pleasing explosion when stamped on. It is the most interesting thing that can be said of them.

We followed an extremely slippery trail (trial) after lunch, through beautiful scenery and a mass of ferns. Apart from the difficulty in staying upright, this was fern paradise! Almost every fern, conveniently presented at eye level on the pathside banks was new (to us). My favourites were *Pteris setuloso-costulata*, with lovely reddish variegation on the pinnae and *Pteris semipinnata*. *Pteris wallichiana*, with spines on each costa, a very large *Pseudophegopteris (rectangularis)*, another tree fern *Alsophila costularis*, and *Acystopteris japonica* all caught the eye. The star however was *Dipteris chinensis*. (See photo pg. 58.) This most un-fern-like fern is a relict of our ancient flora. We did see a few familiar ferns – *Histiopteris incisa* and *Christella dentata* of course, but also *Pyrrosia lingua*, *Hypolepis punctata* and *Woodwardia unigemmata* that many of us cultivate. To avoid the entire party sliding to its death, we drove round to pick up the end of the path. Further delights of course awaited us, including some large diplaziums and archangiopteris, and across a lake a view of a Buddhist monastery lit by the setting sun.

Ping Bian is really off the tourist track! Home to an ethnic minority (not that we would know) this was the least affluent and least touched by modernity of all the places we visited. It seemed an odd place to have a large 3-star hotel (1 star: running water; 2 star: bed; 3 star: milk for tea!!). [I'm being unkind. All our accommodation was perfectly acceptable]. On every flat area including the sides of the roads – clearly a much more important function than driving – were spread various seeds for drying. To aid the drying process it is necessary to make as much noise as possible during the night. Partial compensation was provided by the all-pervading smell of spice wafting up from these drying seeds below our windows.

The next day we drove to Daweishan National Forest Park. We had a long walk through a broad-leaved forest (1600m asl) before continuing along a dirt or tiled track to explore an evergreen forest at 2000m. This was an eco-tourism centre, with overhead walkways for those bored with close-up fern identification. Fortunately no-one was bored enough to throw themselves off. We saw about 50 new species here including a multi-trunked tree fern, *Alsophila latebrosa*, proliferous *Monachosorum henryi*, the curious filmy *Hymenasplenium obliquissimum* and a *Polystichum – chingae*.

Pingbian and Binchuan, 18th- 20th

We had a long drive along very bad pot-holed roads, with much heavy and noisy traffic. Our minibus was not highly sprung. We lunched at a Muslim restaurant (interesting!). The usual suspects on the back seat sustained bruising at both ends, but by way of compensation we arrived and stayed at the Forest Scenic Park near Xi-Lin. This is a UNESCO World Heritage site, fantastically eroded karst scenery. This area is home to the Sami people, with characteristic and colourful native dresses and a strong tradition of handiwork; Batik cloths, bags etc. We had a delightful Sami guide. She even managed to

get us dancing and tolerated our lagging behind looking at another new world of limestone ferns. Aspleniums of course, but also the beautiful and delicate palmate *Aleuritopteris duclouxii* and silver-backed *Cheilanthes (Aleuritopteris) argentea*.

On Sunday (19th) another long drive, this time mainly on motorways, back through Kunming and on the road to Dali. We passed and lunched nearby a large modern town, massively expanding with brand new apartment blocks to serve a growing pharmaceutical industry. We stopped by the road to buy very juicy and surprisingly sweet green oranges before arriving to eat and stay in Binchuan town. A lovely birthday cake was prepared for Roger.

Monday 20th and something completely different – a Holy Mountain (Jizushan). And the ferns were quite different too – lots of athyriums, dryopteris and polystichums, which we'd not seen in profusion elsewhere. *Pseudocystopteris atkinsonii* made an impression with its pinkish variegation, and was quite common, but we also saw the lovely delicate fan-shaped paragymnopteris and aleuritopteris. This mountain was 3200 metres high and a path comprising, we estimated, 5000 steps led to the summit. A few of us, your reporter included, made it to the top, where there was a Buddhist temple, real Buddhist monks, smiling Buddhas, incense burning in big stoves or fires, and of course stunning views. The landscape was wooded throughout, but became more open near the top, springs (the reason for the temple no doubt) fed bubbling streams that accompanied us throughout, and steep cliffs, dripping with ferns constantly delighted. It was admittedly hard work, and on the way down we passed an elderly (and significantly overweight) monk being carried up on a litter by two acolytes. Would twenty years spent in religious devotion be a price worth paying for a lift up? It was at times a tempting thought.

There is a motorway we could have taken from here to Dali, but it would have been a 200km journey, so we settled for a 3 hour drive on dirt roads to Dali Old Town. This drive was amazing, mainly for the variety of human, animal and vehicular traffic, and by the fact that road works (with the obligatory hoards of manual labourers) and vehicle break-downs constantly block the road.

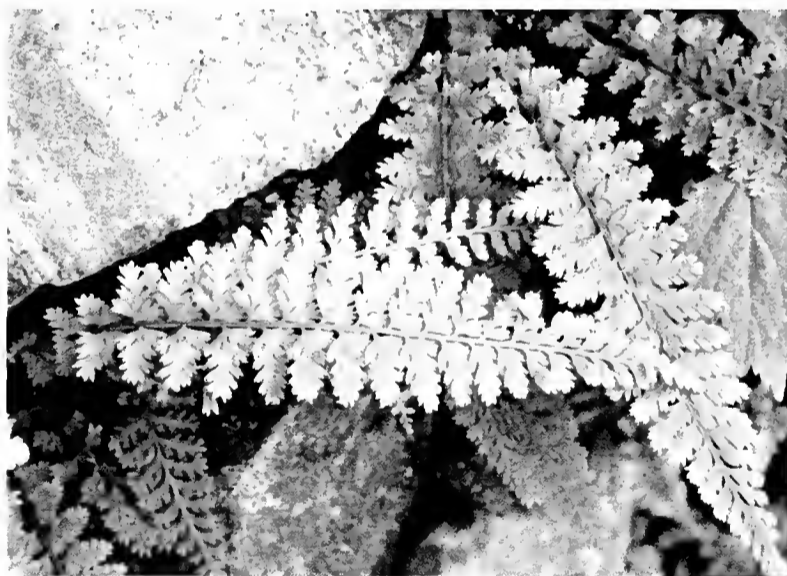
Dali to Kunming, 21st to 24th.

Dali is on the tourist track (Sunday Beijing, Monday Dali, Tuesday Hawai'i etc..)! Our hotel was populated by westerners who it must be said were less attractive than the Chinese. However Dali was a most interesting walled town which preserved a mediaeval character. We had a sightseeing deviation to Sharping Old Town, home to the Bai people, with characteristic black and white traditional houses unspoilt by development. A bustling market sold everything. Spoke for the wheel of your 1932 bicycle? Got it! Button for the dress Grandma made? Got it? Mineral supplement for the pig? Got it! Quick snack? Well maybe not thank you.

We stopped to look at people working in the paddy fields, since the rice was being harvested. The typical holding in China is 1/10 ha and the sheer industry of the people extraordinary.

We visited a tie-dyeing works. You the reader of course know all about this, but I didn't. The cloth is stitched into patterns which are hidden from the dye. The cloth is then dyed and the dye fixed (with citric acid). By careful and clever haggling I managed to buy 3 for 360 Yuan, and then found them cheaper later in Dali. We spent the afternoon in Dali. There are cafes here where coffee can be had! – but it didn't stop us studying the aspleniums on every old wall.

The night and early morning was extremely wet. Our driver was confined to barracks with a temperature of 104°F (malaria we supposed), so belatedly we set off in the Transit and hired taxis to Cangshan mountain. We took a cable car from 2100 to 2650 metres. We were proudly told that the cable car was built by Doppelmayr from Cable Car World in Austria. It certainly was a good ride, looping up and then down before leaving us at a truly magical place. Waterfalls, springs and steams were all around us. The star here (for Patrick at least) was *Equisetum diffusum*. I have to confess that it was attractive but I'm not sure that quite so many photographs were needed. I think it was the attention of the attractive young Chinese visitors that delayed him, but I'm just jealous. The pretty *Cheilosoria hancockii*, *Onychium contiguum* & *lucidum* caught our eye, but there were also many dryopteris (including *sublacera* and our friend *wallichiana*), the impressive *Pteris wallichiana* which some of us grow, and *Pteris aspericaulis* with very rough stipe and rachis.



Asplenium lushanense, above
Asplenium yunnanense, left
Asplenium varians, below
 Photos courtesy of Roger Golding

This mountain is the first in a series of ranges, which climb ever higher towards Tibet and the Himalayas. How wonderful it would be to go deeper into this region, but I would expect it to be pretty inaccessible.

We did some further botanising near another monastery (nunnery



actually) at the foot of the mountain before returning to Dali. Our visit coincided with the Autumn festival, a three day holiday across China, timed with the full moon. Traditional “mooncakes” were being sold and eaten everywhere. We ate late as we were as usual incredibly keen to note every fern everywhere. China has its own “spleenwort triangle”, *Asplenium yunnanense* being the (fertile) apogamous result of a cross between diploid *A. lushanense* and tetraploid *A. varians*. (See photos pg. 66) The creeping *Hypodematium crenatum*, *Leptolepidium subvillosum* and *Adiantum edgeworthii* were other common wall ferns.

After a late start we drove via Chiuxong, a very modern town based on the pharmaceutical industry, where we had lunch. The sheer scale of new building was overwhelming. Arrived in Kunming and enjoyed yet another excellent meal at which we presented gifts to our hosts and driver – an engraved BPS glass, lovingly carried around throughout our trip and amazingly intact at the end of it (not like a recent presentation back home where it was dropped just as the small ceremony was being photographed), and whisky of course for OddJob. The Chinese were line-dancing (in the dark) to a portable stereo near tot eh hotel in the evening.

We visited the Kunming Museum of Ethnic Minorities on Friday. Yunnan is home to 26 ethnic groups (more than any other province because of its geographical diversity). Ethnic diversity and expression, suppressed of course during the Cultural Revolution, is now actively encouraged. We saw a show of dancing in the afternoon, and the participants’ pride was obvious. Particularly interesting for me were the displays of musical instruments and art. We had a painting (in the very characteristic Chinese style) done for us, and Pat and I took tea in the traditional manner.

Just on the edge of Kunming is a large (and rather polluted) lake and a mountain very popular with locals enjoying the last day of the Moon Festival. We spent some time in the afternoon admiring ferns by the paths and then in the light woodlands. The star here was the rare and large *Neochheiropteris palmatopedata*. (See photo page 58) The familiar *Cyrtomium caryotideum* also grew here and some *Dryopteris* species we were now beginning to become familiar with. It was also nice to see *Araiostegia perdurans* and *Athyrium dissitifolium*. We had our final meal in the evening with our host Professor Cheng and his charming wife at the “Old House” restaurant. It’s easy to find since it’s right next to B & Q.

We returned the next day, but not before we had visited the large and impressive park built for the International Garden Festival in 2000.

Chinglish, the Chinese and Chinese food.

The Chinese language is a pictorial one. Although the language has (only recently) been converted into a phonetic form for foreigners to learn (with difficulty – each syllable is said in 4 different ways depending on whether the voice rises, falls or changes during pronunciation). As a result the concepts of grammar or literal translation are foreign to them. Apart from Nihow (hallo) the only word we learned was Wahaha, a brand of bottled water, and by extension, water. Wah (approximately) is water and haha laughter

(of course). This leads to curious translations into English; “No shinny” for example means (naturally) no climbing, but my favourite, outside a restaurant was “Nine bowl of soil Yunnan”. I just about saw what they were getting at but I didn’t go in. We found the Chinese friendly and welcoming. They always wanted to know what we were doing, and after finding out we were looking for ferns, the next question was – can you eat them? In fact we did have ferns on a couple of occasions; *Diplazium esculentum* (very good) and another. When identifying ferns it’s better not to cook them. There’s a challenge – Key to Cooked Ferns. The Chinese love eating together. It’s a social occasion whether it’s just rice in the street or in a restaurant. We always ate at circular tables, where a constant variety of new, exotic, and sometimes edible delicacies would pass in front of you.

Conclusion

Of course the ferns were fantastic. Although natural landscape forms only a tiny part of China, it’s such a huge and varied country. We went to some beautiful places and saw 240 fern taxa, ninety percent of which (at least) were new to us.

China is two countries, the country of the peasant tending his rice paddy, with his water buffalo if he is lucky, selling his oranges or pomegranates by the road, or labouring on a dusty building site or muddy road under construction or in some primitive and noisy factory. And then it is the modern China with impressive motorways snaking their way through tunnels and over viaducts through the countryside, modern new towns and high-tech industries such as the pharmaceutical industry (most generic drugs (and some proprietary) are made in China), drive-through (sorry, Drive Thru) McDonalds, B & Q superstores..... And yet they coexist, apparently in harmony, side by side.... A cyclist with two deer carcasses weaving his way through the traffic in Kunming, a (domesticated) pig trotting along the motorway, a buffalo pulling his overloaded cart along the main road in the middle of town.



Photo Left to right: 2 forest guides; Mr Gardener; Klaus Mehlretter; Patrick Acock; Tom Ranker; Xiao Cheng; Tim Pyner; Roland Ennos; Alison Evans; Martin Rickard; Yvonne Golding; Michael Hayward; Paul Ripley and Roger Golding. *Photo courtesy of Michael Hayward*

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